

ADJUSTABLE SPEED DRIVES **AS3**



HARNESSING THE POWER OF BUILT-IN COMMUNICATIONS

Toshiba's AS3 adjustable speed drive is designed with an emphasis on built-in communications, allowing end-users to access real-time data and refined controls to maximize system performance.



Industry 4.0/IoT (Internet of Things)	Industry 4.0 is the evolution of manufacturing, empowering businesses to learn and adjust from data available through connected manufacturing.
Dual Port Ethernet IP	Enables simple connection of multiple AS3s together on one network while simplifying cable management.
Embedded Web Server	Allows for quick access to Ethernet IP setup, parameters and real-time monitoring for diagnostics. Accessible through standard web browsers on PC, tablets, and smart phones.
Built-in LCD Display & Advanced Keypad	Multi-language LCD display, remote mounting, IP65 rated, transfer/save parameters, real-time clock for fault logging, and calendar functionality.
QR Codes	Displayed when troubleshooting faults or alarms, providing immediate access to a dedicated web link for maintenance and support.
STO Terminal	Detachable terminal strip meets IEC directives for safety with full implementation of Safe Torque Off, which quickly shuts down the system in the event of an emergency stop.
Permanent Magnet Motor Control	For control of permanent magnet (PM) motors with higher torque and efficiency values.
Pump Control	Multi-PID control with sleep function and the ability to autonomously control booster pumps based on system demands or operating a secondary PID control loop.
ASD Pro Software	Toshiba's programming software, which allows the user to utilize logic-type programming without the expense of a micro PLC.



COMMUNICATION OPTIONS

In addition to the built-in dual port Ethernet, the AS3 can make use of a wide array of easily installed option boards. These boards allow the user to communicate with a wide variety of systems when installed cassette style. Options include:

- Ethernet/IP (Embedded)
- Modbus TCP (Embedded) Modbus RTU

(Embedded)

- PROFINET EtherCAT
- PROFIBUS-DP
- DeviceNET
- CAN open

ADDITIONAL OPTIONS

The AS3 can be supplied with additional options to expand control, allow greater flexibility, and provide better protection for a user's application. **Options include:**

- AC Line Reactors
- DV/DT Long-Lead Filters

 Extended Terminal Cards

- Dynamic
- Flange Kit
- Conduit Boxes
- Safety Module (SS1, SOS, SS1, SBS,

SLS, SDI)

- Encoder Feedback Cards
- Harmonic Filters
- Remote-Mountable Keypads

OTHER SPECIAL FEATURES

 Broad Range of Compliances

Overloads Required)

- NEMA 1 Enclosure
- UL Listed & Labeled • Optional IP55
- NEC 2005 Motor **Overload Retention** Enclosure (No External Motor

INDUSTRIES SERVED

- Oil & Gas
 - Mining & Minerals
 - Chemical
 - Water & Wastewater

APPLICATIONS

- Pumps Fans
 - Compressors
 - Centrifuges
 - Conveyors
 - Mixers
 - Pump Jacks
 - Crushers
 - Cranes Hoists



1. Dual Port Ethernet IP 2. RS485 Communication Port 3. Up to 3 Embedded **Option Card Slots** 4. Safe Torque Off Terminals 5. 3 Digital Output Relays 6. 3 Analog Inputs 7.2 Analog Outputs 8.8 Digital Inputs



AS3 LV ASD

Braking Resistor



Heaky Duty (HD) 0.5 1 2 3 5 7.5 10 15 20 25 30 40 50 60 75 100 125 150 200 250 30 400 50 Normal Duty (ND) 1 2 3 5 7.5 10 15 20 25 30 40 50 60 75 100 125 150 200 250 30 400 50 RATED OUTPUT U U 10 12 18.7 25.4 32.7 46.8 63.4 76.4 92.6 123 149 176 211 2.0 .0 .0 1.0	APPLICABLE MOT	OR (H	P)																				•	•										
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OUTPUT VOLTAGE 200 V Class Three Phase 200 to 240 V (Maximum Output Voltage is Equal to the Input Supply Voltage) OVERLOAD CURRENT RATING VOLTAGE 100 100% for One Minute, 130% for Two Seconds OUTPUT FREQUENCY RANGE Setting Between 0.01 to 590 Hz; Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency IS Set to 0.01 to 80 Hz; Maximum Frequency Adjustable at 0.01 Hz Increments; Default Maximum Frequency is Set to 0.01 to 80 Hz; Maximum Frequency IS Set to 0.01 to 80 Hz; Maximum Frequency IS Set to 0.01 to 80 Hz; Maximum Frequency IS Set to 0.01 to 80 Hz; Maximum Frequency IS Set to 0.01 to 80 Hz; Maximum Frequency IS Set To 0.01 Hz; Maximum Frequency IS Set To 0.01 Hz; Maximum Frequ	200 V Class	Three	-Phase	200 to 2	240 V, 50)/60 H	z (Volta	ge +10%	%, -15%	%, Frequ	iency ±	:5%)																						
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TERMINAL STRIP I/O Eight DI, Three DO (One Form C, Two Form A Relays), Three AI (0 to 10 VDC, -10 to +10 VDC, 0 to 20 mADC), Two AO (0 to 10 VDC or 0 to 20 mADC), STO (Safe Torque Off) 200V CLASS WEIGHTS & DIMENSIONS HD 0.5 1 2 30 40 50 60 75 ND 1 2 33 5 7.5 10 15 20 25 30 40 50 60 75 ND 1 2 33 5 7.5 10 15 20 25 30 40 405 60 75 10.5 1 2 33 5 7.5 10 15 20 26 60 75 30.6																																		

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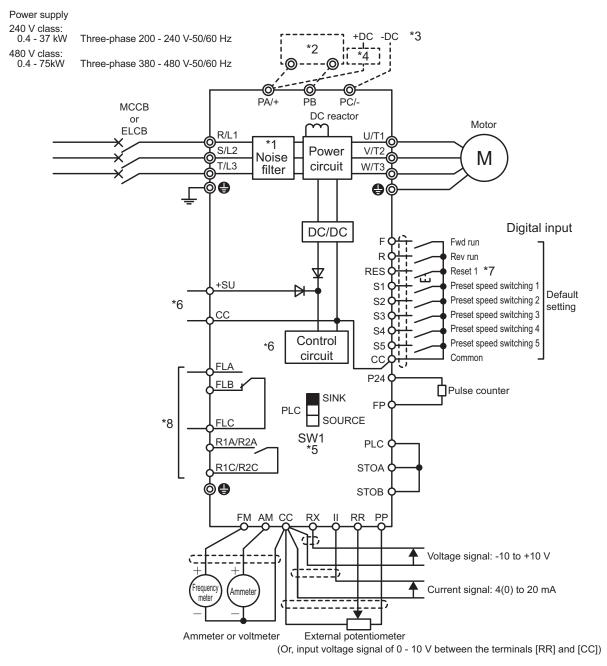


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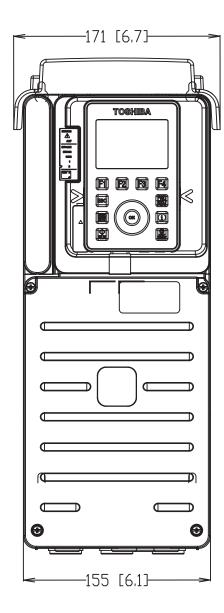
TOSHIBA MOTORS & DRIVES DIVISION

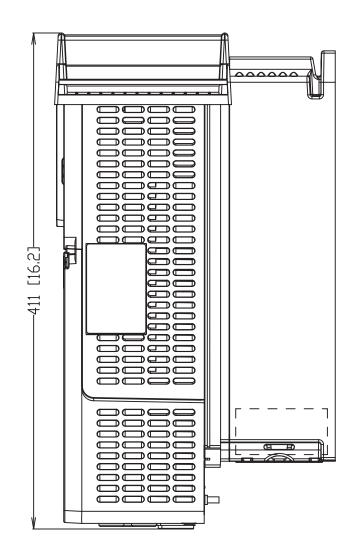
Scan here to learn more about the AS3 [Standard connection diagram - Sink]

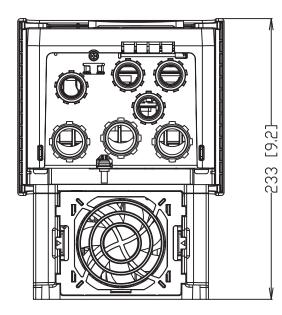
This diagram shows an example of a standard connection for 240 V class, 0.4 to 37kW and 480 V class, 0.4 to 75kW (frame size A1 to A5).



- *1 EMC filter is built in 480 V class.
- *2 External braking resistor (option).
- *3 To supply DC power, connect it to the terminals [PA/+] and [PC/-].
- *4 When your inverter is VFAS3-2110P to VFAS3-2370P or VFAS3-4220PC to VFAS3-4750PC with DC power supply, a circuit to suppress an inrush current is required. For detail, refer to application manual "DC power supply connect to inverter" (E6582156).
- *5 For the switch function, refer to [2. 3. 5].
- *6 To supply control power from an external power supply for backing up the control power supplied from the inverter, an optional control power supply unit (CPS002Z) is required. In this case, it is used in conjunction with the inverter internal power supply. Set <F647: Control power option failure detection> to back up the control power supply. For details, refer to [6, 30, 20].
- *7 The reset signal is activated by $ON \rightarrow OFF$ trigger input.
- *8 Connect to power to comply with OVC2 (Over Voltage Category 2). Isolation transformer is necessary when connecting to power supply (OVC3).







AS3 Frame A2									
Model Number	HP Rating HD	HP Rating ND	Estimated Weight (lbs.)						
VFAS3-2037P	5	7.5	17.0						
VFAS3-4055PC	7.5	10	17.0						
VFAS3-4075PC	10	15	17.0						